IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A system comprising:

an implantable medical device comprising:

a memory; and

a controller circuit, coupled to the memory, wherein the controller circuit is operable to enter a memory scrubbing mode when the controller circuit determines the implantable device is in a high-energy radiation environment by:

monitoring a number of errors encountered while accessing memory locations in a normal operation mode[[;]]. the monitoring including error checking all memory locations of the memory using a first rate of error checking per time period during the normal operation mode;

using the monitored number of errors to determine a rate of memory errors per time period;

comparing the rate of memory errors per time period to a programmable threshold rate of memory errors per time period; and

~~detecting that~~ when the rate of memory errors per time period exceeds the programmable threshold error rate of memory errors per time period, then entering the memory scrubbing mode; and

wherein the memory scrubbing mode has an increased rate of error checking all memory locations of the memory per time period to detect and correct single bit errors in the memory.

2. (Canceled)

3. (Original) The system of claim 1, wherein the implantable medical device further includes a sensor coupled to the controller circuit to determine the implantable device has entered a high-energy radiation environment.

4. (Previously Presented) The system of claim 3, wherein the memory includes a plurality of memory cells, wherein the sensor includes at least one memory cell designed to be more susceptible to radiation energy than other memory cells, and wherein the controller circuit determines a high-energy radiation environment by detecting a rate of memory errors in the memory cell that exceeds a predetermined threshold.

5. (Original) The system of claim 4, wherein the at least one memory cell designed to be more susceptible to radiation than other memory cells includes a RAM cell.

6. (Original) The system of claim 1, wherein the controller circuit is operable to exit the memory scrubbing mode when the controller circuit determines that the implantable device is no longer in a high-energy radiation environment.

7. (Original) The system of claim 6, wherein the controller circuit determines that the implantable medical device is no longer in a high-energy radiation environment by detecting a rate of memory errors that is below a predetermined threshold rate.

8. (Previously Presented) The system of claim 6, wherein the memory includes a plurality of memory cells, including at least one memory cell designed to be more susceptible to radiation energy than other memory cells, and wherein the controller circuit determines the implantable medical device is no longer in a high-energy radiation environment by detecting a rate of memory errors in the at least one memory cell that is below a predetermined threshold rate.

9. (Original) The system of claim 8, wherein the at least one memory cell includes a plurality of memory cells designed to be more susceptible to radiation than other memory cells, and wherein such cells are distributed among a plurality of physical locations of the memory.

10. (Original) The system of claim 1, wherein the implantable medical device includes a timer coupled to the controller circuit, and wherein the controller circuit is operable to exit the memory scrubbing mode after a predetermined time duration.

11. (Original) The system of claim 1, wherein the controller circuit is operable to detect and correct single bit errors in the memory.

12. (Original) The system of claim 1, wherein the controller circuit is operable to detect and correct multiple bit errors in the memory.

13. (Original) The system of claim 1, wherein the implantable medical device further includes a telemetry circuit coupled to the controller circuit, wherein the system further includes an external device to communicate with the device through the telemetry circuit, and wherein the controller circuit determines a high-energy radiation environment by the external device enabling a high-energy radiation memory scrubbing mode in the implantable medical device.

14. (Original) The system of claim 13, wherein the controller circuit determines that the implantable medical device is no longer in a high-energy radiation environment by the external device disabling the high-energy radiation memory scrubbing mode in the implantable medical device.

15. (Original) The system of claim 13, wherein the external device is operable to communicate with a global computer network.

16. (Original) The system of claim 13, wherein the external device includes a programmer of an implantable medical device.

17. (Original) The system of claim 13, wherein the external device is an RF transmitter associated with a radiation source.

18. (Original) The system of claim 1, wherein the implantable medical device further includes:

at least one output to provide therapy to the patient; and

a therapy circuit coupled to the at least one output and the controller circuit, the therapy circuit operable to deliver therapy to the patient.

19. (Original) The system of claim 18, wherein the controller circuit is operable to execute instructions implementing the memory scrubbing mode at a lower priority than instructions related to therapy.

20. (Original) The system of claim 18, wherein the controller circuit is configured to withhold therapy when the implantable medical device enters the memory scrubbing mode.

21. (Original) The system of claim 18, wherein the implantable medical device further includes at least one electrical input to receive sensed electrical activity of a heart of a patient, wherein the output includes an electrical output, and the implantable device is a cardiac rhythm management device.

22. (Original) The system of claim 21, wherein the implantable medical device includes a cardioverter defibrillator.

23. (Original) The system of claim 19, wherein the implantable medical device provides drug therapy to the patient.

24. (Currently Amended) A method comprising:

determining that an implantable medical device is in a high-energy radiation environment by:

monitoring a number of errors encountered while accessing memory locations in a normal operation mode[[;]], the monitoring including error checking all memory locations of the memory at a first rate of error checking per time period during the normal operation mode;

using the monitored number of errors to determine a rate of memory errors per time period;

comparing the rate of memory errors per time period to a programmable threshold rate of memory errors per time period; and

~~detecting that~~ when the rate of memory errors per time period exceeds the programmable threshold error rate, then entering a memory scrubbing mode;

~~enabling a memory scrubbing mode in response to the implantable medical device entering the high-energy radiation environment;~~ and

during the memory scrubbing mode, increasing a rate of error checking of all memory locations of the memory per time period to detect and correct memory errors in the device ~~upon the enabling of the scrubbing mode~~.

25. (Canceled)

26. (Original) The method of claim 24, wherein determining that an implantable medical device is in a high-energy radiation environment includes the implantable device detecting that at least one memory cell susceptible to lower levels of radiation energy than other memory cells has a rate of memory errors that exceeds a predetermined threshold rate.

27. (Original) The method of claim 24, wherein determining that an implantable medical device is in a high-energy radiation environment includes an external device enabling the implantable device into a high-energy radiation memory scrubbing mode.

28. (Original) The method of claim 24, wherein the method further includes disabling the memory scrubbing mode when a duration of the memory scrubbing mode in the implantable medical device exceeds a predetermined duration.

29. (Original) The method of claim 24, wherein the method further includes:

determining that the implantable medical device is no longer in the high-energy radiation environment;

disabling the memory scrubbing mode; and

returning to a lower rate of detecting and correcting memory errors in the device.

30. (Original) The method of claim 29, wherein determining that the implantable medical device is no longer in a high-energy radiation environment includes the implantable device detecting a rate of memory errors that is below a predetermined threshold.

31. (Original) The method of claim 29, wherein determining that the implantable device is no longer in a high-energy radiation environment includes detecting that at least one memory cell susceptible to lower levels of radiation energy than other memory cells has a rate of memory errors below a predetermined threshold rate.

32. (Original) The method of claim 29, wherein determining that the implantable device is no longer in a high-energy radiation environment includes an external device disabling the memory scrubbing mode.

33-50. (Canceled)

51. (Currently Amended) An apparatus comprising:

means for determining that an implantable medical device is in a high-energy radiation environment;

means for:

monitoring a number of errors encountered while accessing memory locations in a normal operation mode, the monitoring including error checking all memory locations of the memory at a first rate of error checking per time period during the normal operation mode;

using the monitored number of errors per time period to determine a rate of memory errors per time period;

comparing the rate of memory errors per time period to a programmable threshold rate of memory errors per time period; and

detecting that the rate of memory errors per time period exceeds the programmable threshold error rate per time period;

means for enabling a memory scrubbing mode in response to the implantable medical device entering the high-energy radiation environment ~~when~~ as determined by the rate of memory errors per time period exceeds the programmable threshold error rate per time period; and

means for increasing a rate of error checking of all memory locations of the memory per time period during the memory scrubbing mode to detect and correct memory errors in the device upon the enabling of the scrubbing mode.

52. (Previously Presented) The system of claim 1, comprising a radiation detector circuit, operatively coupled to the controller circuit, the radiation detector circuit operative to detect a condition correlative to a high energy radiation level to permit the controller to determine whether the implantable device is in a high-energy radiation environment.

53. (Previously Presented) The system of claim 1, in which the controller circuit is operative to detect, at a checking rate, a rate of occurrence of errors in information stored in the memory circuit, and to compare the rate of occurrence of errors to a predetermined threshold, and to enter the memory scrubbing mode to increase the checking rate from a first checking rate value to a second checking rate value in response to the rate of occurrence of the errors exceeding the predetermined threshold.

54. (Previously Presented) The system of claim 1, comprising means for determining a condition correlative to a high-energy radiation level that exceeds a background radiation level to declare whether the implantable device is in the high-energy radiation environment.

55. (Previously Presented) The system of claim 1, comprising:

a sensing circuit coupled to the electrical input to receive sensed electrical activity of a heart of a patient;

at least one electrical output to provide therapy to the heart;

a therapy circuit coupled to the at least one output, operable to deliver therapy to the heart; and

wherein the controller circuit is operable to provide therapy through the therapy circuit.

56. (Previously Presented) The method of claim 24, in which the determining that the implantable medical device is in a high-energy radiation environment comprises determining whether condition correlative to a high-energy radiation level exceeds a background radiation level.

57. (New) A system comprising:

an implantable medical device comprising:

a memory; and

a controller circuit, coupled to the memory, wherein the controller circuit is operable to enter a memory scrubbing mode when the controller circuit determines the implantable device is in a high-energy radiation environment by:

monitoring a number of errors encountered while accessing memory locations in a normal operation mode;

using the monitored number of errors to determine a rate of memory errors per time period;

comparing the rate of memory errors to a programmable threshold rate of memory errors per time period; and

detecting that the rate of memory errors exceeds the programmable threshold error rate;

wherein the memory scrubbing mode has an increased rate of error checking to detect and correct single bit errors in the memory;

a sensor coupled to the controller circuit to determine the implantable device has entered a high-energy radiation environment; and

wherein the memory includes a plurality of memory cells, wherein the sensor includes at least one memory cell designed to be more susceptible to radiation energy than other memory cells, and wherein the controller circuit determines a high-energy

radiation environment by detecting a rate of memory errors in the memory cell that exceeds a predetermined threshold.

58. (New) The system of claim 57, wherein the at least one memory cell designed to be more susceptible to radiation than other memory cells includes a RAM cell.

59. (New) The system of claim 57, wherein the controller circuit is operable to exit the memory scrubbing mode when the controller circuit determines that the implantable device is no longer in a high-energy radiation environment, and wherein the memory includes a plurality of memory cells, including at least one memory cell designed to be more susceptible to radiation energy than other memory cells, and wherein the controller circuit determines the implantable medical device is no longer in a high-energy radiation environment by detecting a rate of memory errors in the at least one memory cell that is below a predetermined threshold rate.

60. (New) The system of claim 57, wherein the at least one memory cell includes a plurality of memory cells designed to be more susceptible to radiation than other memory cells, and wherein such cells are distributed among a plurality of physical locations of the memory.

61. (New) A method comprising:

determining that an implantable medical device is in a high-energy radiation environment by:

monitoring a number of errors encountered while accessing memory locations in a normal operation mode;

using the monitored number of errors to determine a rate of memory errors per time period;

comparing the rate of memory errors to a programmable threshold rate of memory errors per time period; and

detecting that the rate of memory errors exceeds the programmable threshold error rate;

determining that an implantable medical device is in a high-energy radiation environment by using the implantable medical device for detecting that at least one memory cell susceptible to lower levels of radiation energy than other memory cells has a rate of memory errors that exceeds a predetermined threshold rate;

enabling a memory scrubbing mode in response to the implantable medical device entering the high-energy radiation environment; and

increasing a rate of error checking to detect and correct memory errors in the device upon the enabling of the scrubbing mode.

62. (New) The method of claim 61, wherein the method further includes:

determining that the implantable medical device is no longer in the high-energy radiation environment;

disabling the memory scrubbing mode; and

returning to a lower rate of detecting and correcting memory errors in the device.

63. (New) The method of claim 62, wherein determining that the implantable device is no longer in a high-energy radiation environment includes detecting that at least one memory cell susceptible to lower levels of radiation energy than other memory cells has a rate of memory errors below a predetermined threshold rate.